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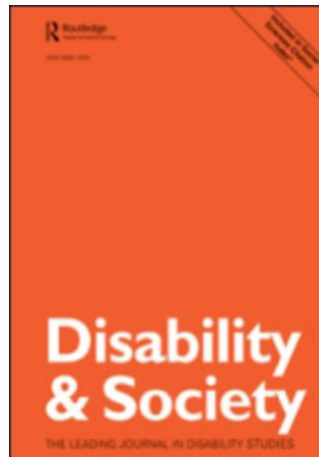
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A study on intersectional discrimination in employment against disabled women in the UK

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Manuscript ID	CDSO-2019-0060.R1
Manuscript Type:	Original Article
Keywords:	Disabled women, Employment status, Intersectional discrimination, Random Effects Modeling, United Kingdom
Abstract:	<p>The present study examined the employment status of disabled and nondisabled men and women in the United Kingdom. Using the 2009-14 Life Opportunities Survey (N=32,355 observations), the study empirically examined how the intersection of disability and gender affects disabled women and their employment status in the UK. Random effects multinomial and logistic regression models were used. Findings indicated that disabled women were significantly less likely to be employed and more likely to be economically inactive than disabled men, nondisabled women, and nondisabled men. They were also significantly the least likely to work full-time among the four groups. Disabled women were significantly less likely to be supervisors than disabled men and felt more limited in the type or amount of paid work they could do than nondisabled women. The present study provided empirical evidence to policymakers interested in developing policies that better address intersectional discrimination and enhance disabled women's employment status.</p>

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A Study on Intersectional Discrimination in Employment against Disabled Women in the UK

Points of Interest (words: 149)

- In 2016, one in five working-age (16–64) adults in the UK were disabled, and there were more disabled women (6.4 million) than disabled men (5.5 million).
- Disabled people are discriminated against in employment, and disabled women face further discrimination than disabled men.
- This research empirically examined the employment status of UK disabled and nondisabled men and women, and found that disabled women were significantly the most likely to be economically inactive, least likely to be employed, and least likely to work full-time among the four groups.
- Also, disabled women were significantly less likely to be supervisors than disabled men and felt more limited in the type or amount of paid work they could do than nondisabled women.
- Efforts to address the higher level of discrimination experienced by disabled women, compared to men and nondisabled women, and to improve their employment status, are needed.

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1. Introduction

In 2016, approximately one in five working-age (16–64) adults were reported to have a disability in the United Kingdom (UK), and about half of them were in paid work (Emmerson et al., 2017). In recent years, the UK government has brought in a number of measures to reduce disability benefits and funds, including cuts to the Access to Work scheme, which helps individuals and employers fund adjustments necessary for a disabled person to work (e.g. alteration to premises, additional technology). The recent changing government landscape has caused considerable anxiety for disabled people, with the possible impacts of these changes on disabled people in employment yet to be fully comprehended. The Papworth Trust (2018) indicated that in 2016 the

employment rate among the UK’s working-age nondisabled people was approximately 1.6 times higher than that of disabled people. Employment is an important means of securing economic stability and independence. According to Palmer (2011), disabled people have a higher likelihood of experiencing poverty than nondisabled people because disabled people have fewer employment opportunities.

In the UK, there are more disabled women than men (Papworth Trust, 2018). In 2016, there were 6.4 million disabled women (21% of the female population) and 5.5 million disabled men (18% of the male population), which has remained broadly stable over time (Papworth Trust, 2018). Women are less likely to be hired for jobs than men, even if they have the same qualifications, less likely to be promoted to managerial positions (International Labour Organization, 2004), and disabled women are more likely to face further discrimination because of their gender and disability than disabled men or nondisabled women. Hereafter we refer this to as “intersectional discrimination” to explain the interacting effect of disability and gender on disabled women in this study. The European Institute for Gender Equality (2019) defines intersectional discrimination as “discrimination that takes place on the basis of several personal grounds or characteristics/identities, which operate and interact with each other at the same time”. A number of UK studies indicate that disabled women work less in paid employment, and even among those who work, disabled women earn less from paid work compared to disabled men or nondisabled women (Leonard Cheshire Disability, 2014; O’Reilly, 2007). According to a 2014 national UK survey, while

disabled men experienced a pay gap of 11% compared to nondisabled men, the pay gap between disabled women and nondisabled women was much larger at 22% (Papworth Trust, 2014).

While there have been several studies that examined the relationship between disability and employment (see Burchardt, 2000; Meager & Higgins, 2011; Riddell et al., 2010), to our knowledge, there have been no studies that empirically examined the relationship between intersectional discrimination against disabled women and their employment status in the UK; such studies are also scant in other countries. The UN's (2017) "Concluding observations on the initial report of the United Kingdom of Great Britain and Northern Ireland" raised concerns about the "lack of measures and available data concerning the impact of multiple and intersectional discrimination against women and girls with disabilities" in the UK. The goal of this study is to address this gap in the literature. The study empirically examined how and to what extent the intersection of disability and gender affects disabled women and their employment status in the UK. Using the 2009–2014 Life Opportunities Survey, the study compared disabled and nondisabled men and women and their employment status. Multiple employment indicators were examined to provide a more comprehensive overview. Findings from this study can inform policymakers whose duties are to ensure the well-being of disabled people, and provides empirical evidence to develop policies that better address intersectional discrimination against disabled women.

2. Background

Recent UK Policy Trends

Since the announcement of the 2005 report “Improving the Life Chances of Disabled People” by the UK Prime Minister’s Strategy Unit, which aimed to create equality in employment for disabled people by 2025, several policies have been implemented with the objective of bringing more disabled people into paid work. In 2009 the UK government ratified the 2006 United Nations Convention on the Rights of People with Disabilities, which affirms that “all persons with all types of disabilities must enjoy all human rights and fundamental freedoms”, including the right to an “adequate standard of living (Article 28)” and the right to “work and employment (Article 27)”.

However, recent government policies have led to high levels of anxiety among disabled people and disability rights campaigners. In 2008, the Incapacity Benefit (financial and personalized support benefits for those unable to work or needing help finding or maintaining work) was replaced with the Employment and Support Allowance (ESA). Under the new ESA programme, all applicants are first screened through the Work Capability Assessment, an impairment screening test to determine their level of work capability. Compared to the previous Incapacity Benefit programme, eligibility criteria became tighter in the ESA (Department for Work & Pensions, 2014).

In 2013, the Coalition Government announced their intention to replace six means-tested benefits, including ESA, with Universal Credit, which would be capped

at £26,000 per household. Under Universal Credit, it was estimated that up to half a million disabled people and their families would receive reduced benefits (The Children's Society, 2012). The Conservative majority government that followed in 2016 continues to implement these changes; however, the Conservative MPs decided to delay the full rollout until 2021 due to increasing pressure from campaign groups and opposition MPs. Nevertheless, new claimants who are put on Universal Credit receive lower in-work benefits. The HM Treasury Summer Budget (2015) anticipated that the 2015 Welfare Reform and Work Bill would result in new ESA (or Universal Credit) claimants receiving a reduced weekly payment (from £102.15 to £73.10) from April 2017; the Bill was adopted by the government to encourage or "incentivize" more disabled people to go back to work.

In March 2016, Chancellor George Osborne announced new restrictions to further cut £1.3 billion per year in disability benefits, which was estimated to affect 640,000 disabled people (Her Majesty's Treasury, 2016). Even before this latest round of cuts and restrictions, it was estimated that disabled people would lose £28 billion between 2013/14 and 2017/18 as the numbers entitled to ESA and other benefits and tax credits are reduced (Demos, 2013). Cuts to tax credits alone were predicted to affect 545,300 disabled people, with the loss of £370 million by 2018 (Demos, 2013).

Such government cuts are expected to hit disabled women harder than disabled men (Engender, 2012; Women's Budget Group, 2013). Disabled women are more likely to face discrimination and barriers in work than disabled men (World Health

Organization, 2011), and thus, the cuts in ESA and other disability benefits may impact disabled women more than disabled men, potentially increasing the threat of economic hardship.

Disability and Employment

In 2016 the employment rate of working-age disabled people in the UK was substantially lower than that of nondisabled people (50% vs. 80%; Papworth Trust, 2018). In 2007, in the UK, disabled people were two and a half times more likely not to have formal qualifications than nondisabled people (Jones, 2008). Earlier research indicated the proportion of disabled employees in low-paying jobs (i.e. earning less than £7 per hour) was 10% higher than nondisabled employees (Palmer, 2006).

There are numerous barriers to gaining and maintaining employment for disabled people, including difficulty with transport, gaining access to workplaces (for example, getting into buildings), and workplace discrimination (Coleman et al., 2013; Sayce, 2011). Research shows that disabled people experience numerous types of discrimination in the workplace, such as being made fun of by colleagues and managers (Dale & Taylor, 2001; Morris & Turnbull, 2006) and suffering unfair treatment, particularly by managers and/or employers (Coleman et al., 2013), and that they are reticent in telling employers about their disability (Reid & Kirk, 2001). According to a 2008 Fair Treatment at Work Survey, 19% of disabled people in the UK reported experiencing unfair treatment at work compared to 13% of nondisabled people (Fevre et al., 2009). In addition, employers’ concerns about the cost

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4 implications of employing or continuing to employ a disabled person were reported to
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6 form a barrier to disabled people in the labour market (Sayce, 2011). Also, it was
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8 observed that disabled people who have low educational attainment, and/or who do
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10 not have basic skills were likely to experience further barriers to, and within,
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12 employment (Hayllar & Wood, 2011).
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17 On the other hand, researchers have found that mentors (Adelman & Vogel,
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19 1993; Ridley, 2011; Skinner, 2011; Stainer & Ware, 2006; White, 2007), job coaches
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21 (Beinart et al., 1996; Hillage et al., 1998) and support workers (Dewson et al., 2009;
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23 Sayce, 2011) can be important in assisting disabled people to gain and maintain work.
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25 Also, disability benefits and government funds were reported to be important.
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27 Government funding that enables the increased accessibility of the workplace,
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29 through Access to Work (for example, provision of specialist equipment), has been
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31 found to be effective (Beinart et al., 1996; Hillage et al., 1998; Sayce, 2011). The
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33 programme has been particularly successful when providing personalized flexible
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35 support (Sayce, 2011), and long-term support such as assistance with commuter
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37 expenses when public transport is not possible (Dewson et al., 2009; Sayce, 2011).
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39 Also, according to Kaye et al. (2012), 65% of working disabled respondents reported
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41 that without the disability benefits they would not be able to work; 30% of
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43 respondents indicated their carers would not be able to work without the benefits. As
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45 a result, recent cuts to disability benefits are likely to result in more unemployed
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47 disabled people, who are already underemployed compared to the general population.
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Disabled Women and Intersectional Discrimination

Although both disabled men and disabled women are subject to discrimination, disabled women are more likely to experience challenges and difficulties than their male counterparts in the labour market (Barile, 2001; Haveman et al., 2000). The stereotypes that accompany both disability and gender lead disabled women to seem more dependent and less able than disabled men (Coleridge, 1993).

Feminist disability writers such as Meekosha (1990), Neath (1997) and Howe (2000) pointed out that disabled women are at an even greater risk of hardship compared to disabled men and nondisabled people, given the social, historical and economic-based marginalization and oppression towards disabled women.

Traditional disability theories have neglected to explain the gendered nature of discrimination against disabled women and overlooked the combined effects of gender and disability discrimination experienced by disabled women (Mays, 2006).

Intersectional analytical frameworks were inaugurated by American feminists in the late 1980s and early 1990s to theorize the multiple discriminations experienced by African American women (Davis, 2008; Makkonen, 2002). The term “intersectionality” was first used in academia by American Critical Race theorist Kimberlé Crenshaw (1989), who explored the ways in which gender, race and class combined to oppress Black women in the United States. Feminist disability studies adopted intersectional theory to analyse and demonstrate how gender and disability interact on multiple levels and contribute to systematic patterns of discrimination

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4 against disabled women (Garland-Thomson, 2001; Morris, 1999; Thomas, 1999,
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6 2007). In 1993, Jenny Morris, a disabled feminist, first explored the intersection
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8 between gender and disability, and argued that Disabilities Studies have ignored the
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10 gendered dimension of disability. She highlighted the ways in which disabled women
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12 experience simultaneous discrimination (Morris, 1993). Since Morris, intersectional
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14 feminist disability studies have drawn attention to studying the personal experience of
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16 disabled women and exemplified how disability intersects with other sources of social
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18 disadvantages linked to gender, ethnicity and social class (Goodlye and Runswick-
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20 Cole, 2010). Intersectionality theory holds that different forms of oppression (i.e.
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22 racism, sexism, disablism) overlap, intertwine, interact and are dependent on, and
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24 often reinforce, one another. Therefore, the interaction of gender and disability may
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26 intensify the impacts of disability and/or in some way change the impacts (Dutta,
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28 2015; Skinner & MacGill, 2015).

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31 Recently, political discourse on intersectional discrimination has been gaining
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33 more attention. Intersectional discrimination against disabled women has been raised
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35 in international human rights forums (Conejo, 2011), including the Fourth World
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37 Conference on Women and the UN Convention on the Rights of Persons with
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39 Disabilities (CRPD). The CRPD recognized that disabled women and girls are subject
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41 to multiple discriminations and demonstrated a commitment to gender equality by
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43 devoting a specific article to addressing issues specific to disabled women and girls
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45 (Article 6). Also, more attention has been paid to the educational marginalization of
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disabled girls, as education plays a pivotal role in empowering disabled women and providing the foundation for their economic independence (Don et al., 2015; Leonard Cheshire Disability, 2014; Liasidou, 2012).

Despite the importance of the phenomenon, previous studies on intersectional discrimination in the labour market against disabled women, and/or their use of national UK data sets to analyse the impacts of the interaction in the labour market, have not yet been examined. As such, campaigners and policymakers have little robust evidence to develop interventions. Detailed examination of whether, and to what extent, intersectional discrimination affects disabled women and their experiences in the labour market, compared to disabled men, nondisabled men, and nondisabled women, would provide important insights into understanding what happens when identities intersect.

3. Methodology

Data

Data for this study was drawn from the 2009–2014 Life Opportunities Survey (LOS). The LOS is the first social survey to explore disability in terms of social participation barriers that people in the UK experience (Cuddeford et al., 2010). The survey follows the social model’s definition of disability and explores the extent of the additional disadvantage experienced by people with impairments due to a range of social barriers, discrimination, lack of assistance and adjustments. It is also the first large-scale national panel survey to examine disability-related topics in the UK. The survey

used multi-stage random-stratified cluster sampling, which first divides the population into groups according to types of disability (including those with no disability), and then takes random samples from within these strata, with the samples proportional to the group size in the population. This technique ensures the sample is representative of the national population.

The LOS was first conducted between June 2009 and March 2011 (wave 1). The Survey interviewed a total of 31,161 adults aged 16 and over. Approximately one year later, respondents were interviewed again between June 2010 and March 2012 (wave 2), and again approximately two and a half years later between October 2012 and September 2014 (wave 3). Out of a total of 31,161 respondents at wave 1, approximately 24,000 (77%) and 17,000 (54%) completed the survey at wave 2 and wave 3, respectively. Refreshment samples were added to supplement for this attrition. In our analyses, post-stratification weights were applied; these adjust for attrition by assuming that dropouts occur randomly within weighted classes defined by observed variables that are associated with dropouts (Henderson et al., 2010).

Sample

The analytical sample for this study was working-age (16–64) adults residing in the UK. The sample was stratified into four groups: disabled women, disabled men, nondisabled women, and nondisabled men. In total, 32,355 observations were examined across the three waves (n=4,617 disabled women; n=3,635 disabled men; n=12,398 nondisabled women; and n=11,705 nondisabled men). To take account of

multiple measures from the same individuals over time, the present study used random effects modelling, which is further discussed in the later analytic strategy section. Please see Appendix 1 for detailed information on the demographic characteristics of the sample.

Measures

We divided the sample into four disability–gender groups: disabled women, disabled men, nondisabled women and nondisabled men. Respondents were asked to identify their gender status (either “male” or “female”). Respondents were defined as disabled if they indicated having moderate, severe or complete difficulties (5-point scale: no difficulty; mild; moderate; severe; complete) within at least one area of physical or mental functioning, and their activities were limited. “Activities” refer to different areas of physical or mental functioning, such as walking, conversing with others or reading a newspaper even with special equipment (e.g. hearing aids or glasses). The present study thus used the LOS definition of disability and did not construct this variable.

We examined six outcome variables related employment. First, economic status was measured as a three-category nominal variable based on the International Labour Organization (ILO) definition: “in work”, “unemployed (i.e. in the labour market and looking for a job)”, and “economically inactive (i.e. out of the labour market and not looking for a job)”. Second, among those respondents who reported to be “in work”, four indicator variables were further examined: (1) employment type (“self-

employed/employee”); (2) employment contract (“part-time/full-time”); (3) work sector (“private firm or business/public or other kinds”); and (4) supervisory position (“yes/no”). The fourth of these, supervisory position, was only examined among employees, not the self-employed. Lastly, all respondents were asked if they felt limited in the type or amount of paid work they could do (“yes/no”).

Several sociodemographic variables were controlled for to help ensure we were, as far as possible, comparing like with like: ethnicity (“white/other”); marital status (“married/other”); have at least one child aged under five (“yes/no”); education (six-category, mutually exclusive dummy variables; see Table 1 for detailed categorization); and age (continuous variable).

Analytic Strategy

For the multivariate analyses, a random effects multinomial logistic regression model (for variable “economic status”) and random effects logistic regression models (all other employment outcome variables) were used to estimate the association between employment outcomes, disability and gender, while controlling for other demographic factors. All analyses were carried out in STATA 14.0 (StataCorp, College Station, TX).

We used random effects modelling because if we were to run a simple regression model, the result would be biased because of repeated measures and unobserved individual-level heterogeneity (i.e. unobserved omitted variables). Random effects modelling controls for these biases (Dmitrienko et al., 2007; Menard, 2009).

Fixed effects modelling also controls for repeated measures and unobserved heterogeneity; however, fixed effects models cannot estimate the effects of time-invariant covariates (e.g. ethnicity) or changes between individuals (Wooldridge, 2008). Random effects modelling can include time invariant variables and estimates changes both between and within units (Wooldridge, 2008). In random effects modelling, a one unit increase in “X” may have two meanings: (1) differences between individuals when there is a unit difference in “X” between them; and (2) differences within an individual when “X” increases by one. The random effects modelling averages the two effects (Wooldridge, 2008). Since this study is interested in estimating the overall association between disability, gender and employment outcomes cross-sectionally and longitudinally, random effects modelling was used. A Hausman specification test (a statistical test that assesses the suitability of the fixed effects model compared to the random effects model), was conducted and results confirmed the appropriateness of using random effects modelling over fixed effects modelling.

Further, to examine if the intersectional effect of gender and disability were significantly different from merely adding the two effects together, significance tests were conducted after the models were analysed. The purpose of the significance tests was to investigate if the effects of gender and disability intensifies when they interact and, if so, to what extent.

4. Results

Descriptive Analyses

Table 1 presents the descriptive statistics for the employment outcomes of disabled and nondisabled men and women across three waves. Results showed that disabled women (53%) were least likely to be employed, as compared to disabled men (56%), nondisabled men (72%), and nondisabled women (81%). Also, disabled women (42%) were most likely to be economically inactive, as compared to disabled men (37%), nondisabled women (24%), and nondisabled men (24%). With regard to unemployment, disabled men (8%) were slightly more likely to be unemployed than disabled women (5%).

Among those employed, disabled women (22%) were more likely to be self-employed than disabled men (21%), nondisabled women (13%), and nondisabled men (16%); however, test results showed that the small difference between disabled women and men was not statistically significant (i.e. it is unlikely that there is a difference in these proportions, the observed disparity being consistent with sample variation). Disabled women (47%) were also more likely to work part-time than disabled men (14%), nondisabled women (43%) and nondisabled men (11%). On the other hand, they were less likely to work in private firms or businesses (57%) than disabled men (77%), nondisabled women (60%), and nondisabled men (80%); again though test results reported that the difference between disabled and nondisabled women was not statistically significant.

Among respondents working as employees, disabled women (26%) were least likely to work in supervisory positions, as compared to disabled men (33%), nondisabled women (30%), and nondisabled men (38%).

Lastly, with regard to whether the respondents felt limited in the type or amount of paid work they could do, disabled women (53%) were most likely to report “limited”, as compared to disabled men (48%), nondisabled women (40%), and nondisabled men (28%). Statistical test results, however, indicated that the difference between disabled women and men was not significant.

<< TABLE 1 ABOUT HERE >>

Multivariate Analyses

The initial descriptive analysis illustrates the broad patterns but does not take account of other demographic differences between men and women and the disabled and nondisabled in the sample. Table 2 presents the multinomial logistic regression results showing the economic status of disabled women in comparison to disabled men, nondisabled women, and nondisabled men after controlling for other demographic factors. For ease of interpretation, here we exponentiated the coefficients in Table 2 and reported the odds ratios (i.e. the odds of something happening to A versus B).

First, contrary to our descriptive evidence, after controlling for other demographic factors, the odds of disabled men being unemployed were 10% less than disabled women ($e^{(-0.10)}=0.90$). However, the difference was not statistically different

enough. That is, disabled men were approximately 10% less likely to be unemployed than disabled women with similar demographic backgrounds; however, this difference was too small to be statistically significant. On the other hand, nondisabled women ($e^{(-0.51)}=0.58$, $p<0.001$) and nondisabled men ($e^{(-0.80)}=0.45$, $p<0.01$) were significantly less likely to be unemployed than disabled women even after controlling for other demographic factors (42% and 55% respectively).

Second, with regard to being economically inactive, disabled men ($e^{(-0.42)}=0.66$, $p<0.001$), nondisabled women ($e^{(-0.92)}=0.40$, $p<0.001$), and nondisabled men ($e^{(-1.61)}=0.20$, $p<0.001$) were all significantly less likely to be economically inactive than disabled women even after controlling for other demographic factors. Also, a further statistical test (see Table 4) revealed that the difference between disabled women and nondisabled men (i.e. the intersectional effect) was significantly ($p<0.001$) larger than the added differences between disabled men and disabled women (i.e. the gender effect) and nondisabled women and disabled women (i.e. the disability effect), which indicates that the negative effects of disability and gender intensified when they interacted.

<< TABLE 2 ABOUT HERE >>

Table 3 presents the logistic regression results for the rest of the employment outcomes for disabled women in comparison to disabled men, nondisabled women, and men. Odds ratios (Exp(B)) were calculated and are presented here for ease of interpretation. First, results indicated that – conditional on age, ethnicity, marital

status, presence of young children and education – the odds of working as an employee rather than self-employed were 3.35 ($=\text{Exp}(1.21)$, $p<0.001$) times higher for nondisabled women and 2.08 ($=\text{Exp}(0.73)$, $p<0.001$) times higher for nondisabled men than they were for disabled women. Second, disabled men ($\text{Exp}(4.80)=121.51$, $p<0.001$), nondisabled women ($\text{Exp}(0.39)=1.48$, $p<0.001$), and nondisabled men ($\text{Exp}(5.26)=192.48$, $p<0.001$) were significantly more likely to work full-time versus part-time than disabled women. Third, compared with disabled women, the odds of disabled men working in the public sector were 95% smaller ($p<0.001$) and the odds for nondisabled men were similarly 96% smaller ($p<0.001$) than for disabled women. Among respondents working as employees, results showed that disabled men ($\text{Exp}(1.01)=2.75$, $p<0.001$) and nondisabled men ($\text{Exp}(1.20)=3.32$, $p<0.001$) were significantly more likely be supervisors than nondisabled women. Lastly, disabled women were significantly more likely to report feeling limited in the type and amount of paid work available to them than were nondisabled women ($\text{Exp}(-1.04)=0.35$, $p<0.001$) and men ($\text{Exp}(-2.11)=0.12$, $p<0.001$), and further statistical test results showed that the interaction effect of gender and disability (i.e. the difference between disabled women and nondisabled men) was significantly larger than the added separate effects of gender (i.e. the difference between disabled women and disabled men) and disability (i.e. the difference between disabled women and nondisabled women), which indicates that the negative effects of gender and disability amplify when they combine (see Table 4).

<< TABLE 3 ABOUT HERE>>

<<TABLE 4 ABOUT HERE>>

5. Discussion

The present study compared the employment status of disabled and nondisabled men and women in the UK, using a large nationally representative sample from the 2009–2014 Life Opportunities Survey. Our descriptive results indicated that disabled women were less likely to be employed than disabled men, nondisabled women, and men. They were also more likely to work as self-employed, part-time and in the public sector. Further, among employees, disabled women were the least likely to be supervisors among the four disability–gender groups. On the other hand, disabled women were most likely to feel limited in the type or amount of paid work that was available to them. After controlling for a number of relevant socio-demographic factors, overall similar patterns were observed, although there were slight variations depending on the employment outcomes. However, significance test results reported that *the interaction of gender and disability significantly intensified the negative impact of disability for disabled women in terms of labour market participation* (i.e. economically inactive) and *feeling limited in type or amount of paid work* they could do.

Limitations

Before discussing the study's implications, it is important to consider its limitations.

First, this study relied on self-reported information from respondents. As with all

research that does not corroborate information from independent sources, these self-reported data are subject to both recall and social desirability biases. Second, the present study was not able to examine disability by severity due to the unavailability of the data. We expect the outcomes will be different by impairment severity and leave room for future studies to examine how the relationship between employment, gender and disability changes with severity. Third, due to data limitations, the present study was unable to examine earned income (i.e. wage), which is an important barometer for economic status. The gender pay gap is a well-known issue (see International Labour Organization, 2004), however, little is known about how this gap changes when gender interacts with disability. Unfortunately, it was beyond the scope of this paper and we will leave it to future researchers to examine this topic.

Implications

Despite these limitations, this study has notable contributions. The present study was the first to empirically examine intersectional discrimination, in relation to employment against disabled women, using a large, nationally representative sample in the UK. The study investigated disabled women’s employment status in comparison to disabled men, nondisabled men, and nondisabled women; and several employment measures were examined to provide a multidimensional understanding of disabled women’s status in the labour market. Further, the present study examined individuals over multiple time points from 2009 to 2014 and hence provides a more comprehensive overview than a single period of cross-sectional analysis.

Several implications can be drawn from this study. First, our results showed that disabled people, regardless of their gender, were more likely to experience difficulties participating in the labour market than nondisabled people. Both disabled women and disabled men were significantly less likely to be employed than nondisabled men and nondisabled women. Also, disabled people were significantly more likely to feel they were limited in the type or amount of paid work available to them than nondisabled people. However, the recent UK disability benefit cut policies counter to our research findings. It has been over a year since the government cut ESA (financial benefit for disabled people who cannot work) from £102.15 to £73 in July 2017, in a bid to “encourage” more disabled people to go back into work. According to a 2015 study, the unemployment disability benefit rate was already so meagre that one in three recipients struggled to afford food (Disability Benefits Consortium, 2015). A straw poll survey by the Disability Benefits Consortium (2015) indicated that two-thirds of existing ESA claimants believe that the cut would cause their health to suffer, while almost half said it would delay their recovery – and their return to the job market. The survey showed that by reducing the benefit by £30 a week, disabled people were pushed further away from employment, contradicting the government’s desire to reduce the disability employment gap and get more disabled people into work. Meanwhile, the cut has exacerbated the economic hardship of disabled people, and within the disabled population, disabled women, whose economic and labour market

positions are more precarious than those of disabled men, are more likely to be affected by the cut.

Second, although disability poses a barrier for both women and men in the labour market, disabled women experience greater discrimination and difficulties than disabled men. Our results showed that disabled women were significantly more likely to be economically inactive than disabled men, and many (almost 40%) disabled women did not participate in the labour market. Although disabled men were more likely to be unemployed than disabled women, the results flipped once we controlled for other demographic factors, such as marital status, indicating that more disabled women were likely to be unemployed than disabled men when they had similar demographic characteristics. Economically inactive people in the UK are defined as people aged 16 and over without a job who have not sought work in the last four weeks and/or are not available to start work in the next two weeks (Office for National Statistics, 2018). Within the economically inactive group are discouraged workers – persons who are not currently looking for work because they believe there is no job available or there are none for which they would qualify because of structural, social and cultural barriers (European Parliament, 2011). In 2003, approximately two-thirds of total discouraged workers in Australia, Austria, Belgium, Germany, Greece, the Netherlands, Norway and Portugal were women and the female share of total discouraged workers was near 90% in Italy and Switzerland (OECD, 2003). This gender difference is also likely to apply within the disabled population.

According to a 2011 EU report, which examined the reasons for inactivity among the disabled population, more disabled women reported “no availability of work” than disabled men (European Parliament, 2011). Such results indicate that disabled women are more likely to give up looking for jobs because they feel no work is available for them than disabled men and become discouraged workers, which may be one possible factor behind why disabled women are economically less active than disabled men. Furthermore, it has also been reported that more disabled women cited “family care duties” for being economically inactive than disabled men, which suggests that traditional gender-role values persist also within the disabled population (European Parliament, 2011).

Third, our results showed that even among the employed population, disabled women were significantly less likely than disabled men to work full-time and as supervisors. Work hours and workplace ranks are closely related to income (Hecker, 1998), with part-time workers tending to earn less per hour than those working full-time in the UK. In 2013, full-time UK employees, on average, received £13.03 per hour, while part-time employees received £8.29 per hour (Office for National Statistics, 2013). The wage gap is likely to be more prominent between supervisors and non-supervisors, given that employees in higher job ranks usually earn more than people in lower ranks. Consequently, the higher probabilities for disabled women to be outside the labour market, working fewer hours, and in lower ranks than disabled men are likely to increase their risks of poverty, as compared to disabled men.

Fourth, our results showed that the disability gaps were higher than the gender gaps, particularly in terms of employment status and the perceived limitations in paid work they could do. While the difference between disabled women and disabled men employed was approximately 3 percentage points, it was approximately 19 percentage points between disabled women and nondisabled women. Also, while 53% of disabled women and 48% of disabled men reported they felt limited in the type or amount of paid work they could do, a substantially lower 40% of nondisabled women reported they felt limited (see Table 1).

Lastly, further statistical tests were conducted to examine if the intersectional effects of gender and disability were significantly different from merely adding the two effects together. Results showed that the negative effects of gender and disability significantly intensified when they interacted, particularly in terms of labour market participation (i.e. economically inactive) and feeling limited in the type or amount of paid work they could do. These results suggest that efforts to narrow the disability and gender gaps, for example, in labour market participation, would not have the same degree of impact on disabled women as it would for disabled men or/and nondisabled women because of the intersectional effect of gender and disability, and hence, additional efforts are required to narrow the gender gap between disabled women and nondisabled men.

6. Conclusion

Historically, gender and disability have usually been addressed separately in political debates. Recently, more attention has been given to the intersection between gender and disability. In line with recent trends, the present study explored the intersectional effect of gender and disability on disabled women in relation to the labour market. Our study results indicate that, among the four disability–gender groups, disabled women were the least likely to be employed, work full-time, work as supervisors, or work in private firms or businesses. They were also most likely to report feeling limited in the type or amount of paid work they could do. This paper provides empirical evidence for policymakers to develop affirmative actions addressed to disabled women and policy frameworks to promote participation of disabled women in the labour market. Findings from this study were based from 2009 to 2014, amid the government disability benefit reforms. With disability benefit cuts now having been fully implemented, it is highly likely that if data were available to conduct this study using 2019 responses, the employment status of disabled women will have deteriorated. It is important for future research to examine how the government disability cuts have impacted disabled women and their employment status, as soon as data becomes available.

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Table 1. Description of the Sample (Three Wave Average)

	Disabled women (n=4,617) %	Disabled men (n=3,635) %	Nondisabled women (n=12,398) %	Nondisabled men (n=11,705) %	Post-hoc test ^a
Economic status					
<i>In work</i>	52.7	55.5	71.5	81.0	
<i>Unemployed</i>	5.1	8.0	4.2	5.4	A,B,C
<i>Inactive</i>	42.2	36.5	24.3	23.6	
Employment type					
<i>Self-employed</i>	21.6	21.1	13.2	15.9	B,C
<i>Employee</i>	78.4	78.9	86.8	84.1	
Employment contract					
<i>Part-time</i>	47.4	13.8	42.7	11.1	A,B,C
<i>Full-time</i>	52.6	86.2	57.3	88.9	
Work Sector					
<i>Private firm or business</i>	56.8	77.0	59.8	80.3	A,C
<i>Public or other kinds</i>	43.2	23.0	40.2	19.7	
Supervisory position (among employees only)					
<i>No</i>	73.7	66.9	70.1	61.7	A,B,C
<i>Yes</i>	26.4	33.1	29.9	38.3	
Limited in the type or amount of paid work					
<i>No</i>	46.6%	52.0%	60.1%	72.3%	B,C
<i>Yes</i>	53.4	48.1	39.9	27.7	

Notes: Values are weighted. ^aPost-hoc tests were conducted to examine if there were significant ($p < 0.05$) differences between groups. *A*=Significant differences between disabled women and disabled men. *B*=Significant differences between disabled women and nondisabled women. *C*=Significant differences between disabled women and nondisabled men.

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Table 2. A Multinomial Logistic Regression Model of Economic Status and Disabled and Nondisabled Men and Women

	Unemployed	Inactive
	Base outcome: In Work	
	Coeff. (SE)	Coeff. (SE)
Disability (ref: Disabled Women)		
<i>Disabled men</i>	−0.10 (0.07)	−0.42 (0.07)***
<i>Nondisabled women</i>	−0.54 (0.06)***	−0.92 (0.06)***
<i>Nondisabled men</i>	−0.80 (0.06)***	−1.61 (0.06)***
Wave 2 (ref: Wave 1)	0.22 (0.11)*	0.13 (0.12)
Wave 3 (ref: Wave 1)	−0.02 (0.05)	−0.14 (0.05)**
White	−0.66 (0.06)***	−0.99 (0.06)***
Married	−0.32 (0.04)***	−0.28 (0.04)***
Have a child(ren) under 5 years old	0.20 (0.06)**	0.44 (0.06)***
Age	−0.18 (0.01)***	−0.36 (0.01)***
Age-squared	0.01 (1.07e-4)***	0.01 (1.07e-4)***
Education (ref: Degree level qualification)		
<i>Higher education below degree level</i>	0.17 (0.06)**	0.16 (0.06)**
<i>A levels/Highers/ONC/National BTEC</i>	0.16 (0.06)*	0.23 (0.06)**
<i>O Level/GCSE Grade A–C/CSE Grade 1</i>	0.29 (0.06)***	0.37 (0.06)***
<i>GCSE Grade D–G/CSE Grade 2–5</i>	0.49 (0.09)***	0.66 (0.09)***
<i>No formal qualifications</i>	0.90 (0.16)***	1.47 (0.06)***
Constant	2.527 (0.19)***	6.53 (0.19)***

Note: * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 3. Random Effects Logistic Regression Models: Employment Status and Disabled and Nondisabled Men and Women

	Employee vs. Self-Employed	Full-time vs. Part-time	Public vs. Private	Supervisor vs. Non-supervisor ^a	Limited vs. Not limited
	Coeff. (SE)	Coeff. (SE)	Coeff. (SE)	Coeff. (SE)	Coeff. (SE)
Disability (ref: Disabled Women)					
<i>Disabled men</i>	0.13 (0.18)	4.80 (0.19)***	−3.04 (0.21)***	1.01 (0.12)***	−0.35 (0.21)
<i>Nondisabled women</i>	1.21 (0.13)***	0.39 (0.11)***	0.02 (0.15)	0.12 (0.09)	−1.04 (0.21)***
<i>Nondisabled men</i>	0.73 (0.13)***	5.26 (0.16)***	−3.22 (0.17)***	1.20 (0.10)***	−2.11 (0.29)***
Wave 2 (ref: Wave 1)	−0.30 (0.31)	0.59 (0.30)	0.11 (0.36)	0.05 (0.23)	0.03 (0.46)
Wave 3 (ref: Wave 1)	−0.46 (0.09)***	0.02 (0.08)	−0.53 (0.09)***	−0.35 (0.07)***	−0.33 (0.15)*
White	0.62 (0.15)***	0.67 (0.14)***	0.27 (0.18)	0.73 (0.11)***	0.20 (0.18)
Married	0.04 (0.10)	−0.78 (0.10)***	0.17 (0.11)	0.42 (0.07)***	−0.07 (0.15)
Have a child(ren) under 5 years old	−1.29 (0.12)***	−0.89 (0.12)***	−0.18 (0.14)	0.17 (0.09)***	0.74 (0.20)***
Age	0.17 (0.02)***	0.470 (0.02)***	0.28 (0.03)***	0.38 (0.02)***	0.05 (0.03)
Age-squared	−2.70e-3(2.74e-4)***	−0.01(2.76e-4)***	−2.58e-3(3.31e-4)***	−0.01 (2.27e-4)***	−4.85e-4 (3.87e-4)
Education (ref: Degree level qualification)					
<i>Higher education below degree level</i>	−0.82 (0.12)***	−0.76 (0.12)***	−2.67 (0.14)***	−1.42 (0.09)***	0.15 (0.21)
<i>A levels/Highers/ONC/National BTEC</i>	−0.87 (0.14)***	−1.17 (0.13)***	−2.53 (0.15)***	−1.65 (0.10)***	−0.08 (0.22)
<i>O Level/GCSE Grade A–C/CSEGrade 1</i>	−0.93 (0.13)***	−1.48 (0.13)***	−3.30 (0.15)***	−2.32 (0.11)***	0.42 (0.21)
<i>GCSE Grade D–G/CSE Grade 2–5</i>	−1.67 (0.19)***	−1.50 (0.18)***	−3.73 (0.23)***	−2.64 (0.16)***	0.48 (0.27)
<i>No formal qualifications</i>	−1.81 (0.16)***	−1.65 (0.15)***	−4.41 (0.21)***	−3.66 (0.15)***	−0.02 (0.22)
Constant	2.67 (0.50)***	−7.64 (0.50)***	−6.23 (0.60)***	−9.93 (0.46)***	−0.72 (0.59)
Sigma_u	4.40 (0.09)	4.00 (0.11)	5.19 (0.12)	3.06 (0.11)	1.09 (0.35)
rho	0.85 (0.01)	0.83 (0.01)	0.89 (0.01)	0.74 (0.01)	0.26 (0.13)

Notes: ^aOnly among employees.

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p* < .05. *p* < .01. ****p* < .001.

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Table 4. Comparison of Gender Effects, Disability Effects, Added Effects and Intersectional Effects

	Gender Effects (=Disabled women vs. Disabled men coeff.)	Disability Effects (=Disabled women vs. Nondisabled women coeff.)	Added Effects (=Gender effect coeff. + Disability effect coeff.)	Intersectional Effects (=Disabled women vs. Disabled men coeff.)	<i>Added effect vs. Intersectional effect^a</i>
Unemployed vs. Employed	-0.10	-0.54	-0.10-0.54=-0.64	-0.80	<i>(-0.64 vs. -0.80)</i>
Inactive vs. Employed	-0.42	-0.92	-0.42-0.92=-1.34	-1.61	<i>(-1.34 vs. -1.61)***</i>
Employee vs. Self-Employed	0.13	1.21	0.13+1.21=1.34	0.73	<i>(1.34 vs. 0.73)**</i>
Full-time vs. Part-time	4.80	0.39	4.80+0.39=5.19	5.26	<i>(5.19 vs. 5.26)</i>
Public vs. Private	-3.04	0.02	-3.04+0.02=-3.02	-3.22	<i>(-3.02 vs. -3.22)</i>
Supervisor vs. Non-supervisor	1.01	0.12	1.01+0.12=1.13	1.20	<i>(1.13 vs. 1.20)</i>
Limited vs. Not limited	-0.35	-1.04	-0.35-1.04=-1.39	-2.11	<i>(-1.39 vs. -2.11)**</i>

Notes: ^aConducted significance test to examine if there were significant differences between the “added effect” and the “intersectional effect”.

** $p < .01$. *** $p < .001$.

Appendix 1. Description of the Sample (Three Wave Average)

	Disabled women (n=4,617)	Disabled men (n=3,635)	Nondisabled women (n=12,398)	Nondisabled men (n=11,705)
White	87.8%	91.3%	88.7%	90.3%
Married	46.9%	49.1%	50.9%	50.3%
Have children under 5 years old	11.1%	9.0%	16.0%	13.0%
Household making ends meet				
<i>Great difficult</i>	13.8%	15.1%	6.2%	8.0%
<i>Some difficult</i>	35.9%	34.0%	26.3%	27.2%
<i>Fairly easy</i>	38.0%	37.8%	46.4%	44.8%
<i>Very easy</i>	12.3%	13.1%	21.2%	20.0%
Education				
<i>Degree level qualification</i>	19.0%	15.0%	27.9%	26.1%
<i>Higher education below degree level</i>	21.8%	26.4%	19.1%	21.8%
<i>A levels/Highers/ONC/National BTEC</i>	13.9%	13.7%	17.8%	19.7%
<i>O Level/GCSE Grade A–C/CSE Grade 1</i>	19.1%	17.3%	21.2%	17.5%
<i>GCSE Grade D–G/CSE Grade 2–5</i>	6.4%	6.1%	4.9%	5.3%
<i>No formal qualifications</i>	19.9%	21.5%	9.1%	9.7%
	<i>Mean (SD)</i>	<i>Mean (SD)</i>	<i>Mean (SD)</i>	<i>Mean (SD)</i>
Age	45.0 (12.7)	45.3 (13.1)	39.5 (14.1)	39.6 (14.3)

Note: Values are weighted.

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Response to reviewers' comments

<Reviewer 1>

Num	Reviewer's comment	Response	Page Num.
A1	Points of Interest: Typo error. Please fix "one if five"	We appreciate the reviewer's feedback. Corrections were made accordingly.	1
A2	Points of Interest: Avoid jargon (e.g. intersectional discrimination) and explain using plain language	The authors have replaced the "intersectional discrimination" with a plainer language for non-specialist readers: " higher level of discrimination ".	1
A3	Points of Interest: Clarify your own terminology. The phrase "adults had disability" is problematic	"Adults had disability" was changed to "adults in the UK were disabled"	1
A4	Text: Be clear about and justify your own terminology	The text was thoroughly revised and the terminologies (i.e. intersectional discrimination) were further explained to justify its definitions. We state: "The European Institute for Gender Equality (2019) defines intersectional discrimination as "discrimination that takes place on the basis of several personal grounds or characteristics/identities, which operate and interact with each other at the same time"	2
A5	Text: The reviewer recommends if you can offer a critical appraisal of the history of ideas relevant to your study and provide at least two or three current references from the journal on the particular issue that your study conveys.	The authors have provided a detailed historical explanation of the development of the intersectional theory and provided three references from the Disability & Society journal of recent studies on intersectional discrimination against disabled women. This includes the following insertion:	8-10

“Intersectional analytical frameworks were inaugurated by American feminists in the late 1980s and early 1990s to theorize the multiple discriminations experienced by African American women (Davis 2008; Makkonen 2002). The term intersectionality was first used in academia by American Critical Race theorist Kimberle Crenshaw (1989), who explored the ways in which gender, race, and class combined to oppress Black women in the US. [.....] In 1993 Jenny Morris (1993), a disabled feminist, first explored the intersection between gender and disability, and argued that Disabilities Studies have ignored the gendered dimension of disability. She highlighted the ways in which disabled women experience simultaneous discrimination. Since Morris, intersectional feminist disability studies have drawn attention to studying the personal experience of disabled women and exemplified how disability intersects with other sources of social disadvantages linked to gender, race and social class (Goodlye and Runswick-Cole, 2010). Intersectionality theory holds that different forms of oppression (i.e., racism, sexism, disablism) overlap, intertwine, interact and are dependent on and often reinforce one another. Therefore, the

		<p>interaction of gender and disability may intensify the impacts of disability and/or in some way change the impacts (Dutta, 2015; Skinner and MacGill, 2015).</p> <p>Recently, political discourse on intersectional discrimination has been gaining more attention. Intersectional discrimination against disabled women has been raised in international human rights forums (Conejo, 2011), including the Fourth World Conference on Women and the UN Convention on the Rights of Persons with Disabilities (CRPD,). The CRPD recognized that disabled women and girls are subject to multiple discriminations and demonstrates a commitment to gender equality by devoting a specific article to addressing issues specific to disabled women and girls (Article 6). Also, more attention has been paid to the educational marginalization of disabled girls, as education plays a pivotal role in empowering disabled women and providing the foundation for their economic independence (Don, Salami, and Ghajarieh, 2015; Leonard Cheshire Disability, 2014; Liasidou, 2012).”</p> <p>As a critique of existing work, we have also added: “previous studies on intersectional discrimination in</p>	
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		the labour market against disabled women, and/or their use of national UK data sets to analyse the impacts of the interaction in the labour market, have not yet been examined. As such, campaigners and policymakers have little robust evidence to develop interventions.”	
A6	Text: Please make quantitative data more accessible to non-specialist readers. Non-specialist readers may not be familiar with terms such as “bivariate analysis” and “multivariate analysis.” Tables should be reduced. Try to minimize the statistics and try to explain the trends.	The authors have changed the results section so that it is more easily readable to non-specialist readers. Plainer language was used and statistical explanations were reduced. The number of tables was reduced to four. The authors decided to keep Table 1-4 because they are directly related to the main findings and are addressed extensively also in our discussions. Hence, we believe if the tables are taken out it will be more confusing to the readers.	Throughout the methodology and results sections (pp.10-18)
A7	Text: The paper needs extensive editing and careful proofreading. The reviewer believes that the penultimate sentence about the UN reference will be better if placed in the introduction section.	The authors have proofread the manuscript carefully and also had help with professional editing service. The sentence including the UN reference was changed to the introduction section in the revised manuscript	3 & Throughout the manuscript
A8	Text: The conclusion fades away and the reviewer encourages the authors to end with some stronger questions or powerful statements regarding future directions to take the readers forward.	The authors have revised the conclusion. In the revised manuscript, we addressed concerns about the recent government disability cuts and how it may have exacerbated the economic hardship of disabled women. We asked for future research to empirically test this hypothesis.	20

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<Reviewer 2>

Num	Reviewer’s comment	Response	Page Num.
B1	Pg 3: The reviewer advises the authors to change the phrase “policymakers interested in ensuring the well-being of disabled people” to “policymakers <i>whose duty</i> is to ensure the well-being”	The statement was rephrased as suggested by the reviewer.	3
B2	Pg 4: The reviewer advises the authors to include <i>disabled people</i> in the phrase “recent government policies have led to high levels of anxiety among disability rights campaigners.”	Changes were made accordingly to the reviewer’s advice. We change the sentence as follow: “recent government policies have led to high levels of anxiety among disabled people and disability rights campaigners”	4
B3	Pg 6: Typo error: “Types of discrimination”, not “discriminations”	We appreciate the reviewer’s feedback. Corrections were made.	6
B4	Pg 8: Typo error: “Phenomenon”, not “phenomena”	We appreciate the reviewer’s feedback. Corrections were made.	10
B5	Pg 10: Typo error: remove repetition of “total” in “In total, total of”	We appreciate the reviewer’s feedback. Corrections were made.	11
B6	Pg 18: The implication section should start from page 18, just before the paragraph starting “Despite these limitations”. Move the “implications” head to page 18	Changes were made accordingly to the reviewer’s advice. ‘Implications’ was moved to page 20	20
B7	The assertion with which the conclusion starts needs to be toned down. Historically, disability studies neglected women’s issues, it is no longer true as there is a considerable body of literature now on the intersection between feminism and disability studies.	Changes were made accordingly to the reviewer’s advice. I have toned down the assertion and addressed that more intersectional research is being under taken and the present study in in-line with this trend.	25
B8	The reference about the UN would be better in the introduction rather	We appreciate the reviewer’s feedback. Changes were	3

	than in the conclusion section.	made accordingly to the reviewer’s suggestion.	
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